Vegetation Cover Conversion

Product Description

Using MODIS data from the two 250-m bands the product will show the global distribution of the occurrence of vegetation cover change. Where there is sufficient evidence, the type of change will be labeled (e.g. forest conversion to grassland). The distribution of these changes will be represented at a resolution of 250 m and as gridded 10-km summaries. These will be generated at 3 monthly intervals. An interannual product is also being produced which displays the global distribution of change during the previous year.

Research & Applications

Vegetation cover change is an important driver of many important biogeochemical, hydrological and climate processes. It also represents the integrated response to several biophysical and anthropogenic impacts. Among the important influences of vegetation cover change are the following:

- Strongly affects changes in many biophysical factors such as surface roughness and albedo.
- Has a major effect on changes in sensible heat flux, since it affects global albedo and surface roughness which affects atmospheric drag.
- Is of crucial importance for determining the biogeochemical cycling of carbon, nitrogen, and other elements at regional to global scales.
- Has a major impact on the runoff characteristics of catchments through its effects on evapotranspiration and partitioning of precipitation into overland flow, interflow and groundwater accretion.
- Gives a direct insight into ecosystem response related to climate change and anthropogenic influences
- Affects biodiversity through direct impacts on habitat
- Forms an increasingly important set of information for natural resource managers.

This product will be combined with data obtained from finer spatial resolution data from sensors such as Landsat and ASTER to assist the identification of the types of conversion occurring. The product also provides information to assist the acquisition strategy of finer resolution systems since they help flag areas where significant changes are likely.

Data Set Evolution

Previous work has shown that data with a resolution of 1 km and coarser are sufficient for the mapping of the distribution of vegetation cover and for the monitoring of those changes in vegetation cover caused by seasonal to inter-annual climate change. However such relatively coarse resolution data are often inadequate to detect changes caused by anthropogenic factors. Analyses of many types of vegetation cover change indicates that they are relatively small in size largely due to the inherently local nature of anthropogenic vegetation cover conversions. Consequently a very high proportion of changes are only detectable at fine spatial resolutions. For this reason it was decided to use the two 250-m bands for the identification and mapping of this type of conversion.

Suggested Reading

Townshend, J.R.G. and C.O. Justice, 1988.

Townshend, J.R.G., *et al.,* 1991.

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PRODUCT SUMMARY

Coverage:
global, daytime

Spatial/Temporal Characteristics:
250m, 10km, three monthly, yearly

Key Geophysical Parameters:
vegetation cover change occurrence and type

Processing Level:
3

Product Type:
at-launch and post-launch

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